

What is claimed is:

1. An apparatus for multiplexing a digital data line with multiple DSL outputs comprising:
 - an enclosure having a height of one rack-unit;
 - 5 a transceiver disposed within said enclosure for providing connectivity to a digital data line providing 24 DS0 channels to said apparatus; and
 - N DSL transceivers disposed within said enclosure for multiplexing 24/N DS0 channels onto a corresponding number of DSL-compatible transmission media using DSL technology.
2. The apparatus of claim 1, wherein said data line comprises a T1 line.
3. The apparatus of claim 1, wherein said data line comprises a DS1 line.
4. The apparatus of claim 1, wherein said N number of DSL transceivers comprises 3 DSL transceivers for multiplexing 24 DS0 channels onto three coppers pairs containing 8 DS0 channels each.
5. The apparatus of claim 1, wherein said N number of DSL transceivers comprises 2 DSL transceivers for multiplexing 24 DS0 channels onto two coppers pairs containing 12 DS0 channels each.
6. The apparatus of claim 1, further including a line transport interface for providing line power on said DSL-compatible media.
- 20 7. The apparatus of claim 1, further including an analog communications module for providing diagnostic information and connectivity to a central office (CO).
8. The apparatus of claim 1, wherein said enclosure may be mounted within a remote terminal (RT).

9. The apparatus of claim 8, wherein said apparatus receives said digital data line from said RT.
10. An apparatus for multiplexing a digital data line with multiple DSL outputs comprising:
- 5 enclosure means for enclosing the apparatus within a height of one rack-unit; transceiver means disposed within said enclosure for providing connectivity to a digital data line providing 24 DS0 channels to said apparatus; and DSL transceiver means disposed within said enclosure for multiplexing said 24 DS0 channels onto a predetermined number of DSL-compatible transmission media using DSL technology.
11. The apparatus of claim 10, wherein said data line comprises a T1 line.
12. The apparatus of claim 10, wherein said data line comprises a DS1 line.
13. The apparatus of claim 10, wherein said DSL transceiver means comprises 3 DSL transceivers for multiplexing 24 DS0 channels onto three coppers pairs containing 8 DS0 channels each.
14. The apparatus of claim 10, wherein said DSL transceiver means comprises 2 DSL transceivers for multiplexing 24 DS0 channels onto two coppers pairs containing 12 DS0 channels each.
15. The apparatus of claim 10, further including an interface means for providing
20 line power on said DSL-compatible media.
16. The apparatus of claim 10, further including analog communications means module for providing diagnostic information and connectivity to a central office (CO).
17. The apparatus of claim 10, wherein said apparatus may be mounted within a
25 remote terminal (RT).

18. The apparatus of claim 17, wherein said apparatus receives said digital data line from said RT.
19. A Plain Old Telephone Service (POTS) distribution system comprising:
- a carrier node comprising;
 - an enclosure having a height of one rack-unit;
 - a transceiver disposed within said enclosure for providing connectivity to a digital data line providing 24 DS0 channels; and
 - N DSL transceivers disposed within said enclosure for multiplexing 24/N DS0 channels onto a corresponding number of DSL-compatible transmission media using DSL technology; and
 - at least one outside plant Remote Terminal Unit (RTU) operatively coupled via said DSL-compatible transmission medium to said carrier node, said RTU configured to provide POTS service to a plurality of subscribers.
20. The system of claim 19, wherein said data line comprises a T1 line.
21. The system of claim 19, wherein said data line comprises a DS1 line.
22. The system of claim 19, wherein said N number of DSL transceivers comprises 3 DSL transceivers for multiplexing 24 DS0 channels onto three coppers pairs containing 8 DS0 channels each.
23. The system of claim 22, wherein each of said three copper pairs terminates in a corresponding RTU.
24. The system of claim 19, wherein said N number of DSL transceivers comprises 2 DSL transceivers for multiplexing 24 DS0 channels onto two coppers pairs containing 12 DS0 channels each.
25. The system of claim 22, wherein each of said two copper pairs terminates in a corresponding RTU.

26. The system of claim 19, wherein said carrier node further comprises a line transport interface for providing line power on said DSL-compatible media.
27. The system of claim 19, wherein said carrier node further comprises an analog communications module for providing diagnostic information and connectivity to a central office (CO).
28. The system of claim 19, wherein said enclosure may be mounted within a remote terminal (RT).
29. The system of claim 28, wherein said apparatus receives said digital data line from said RT.
30. The system of claim 19, further including at least one straight-through repeater operatively disposed between said carrier node and said at least one RTU.
31. The system of claim 23, further including three straight-through repeaters, each of said repeaters operatively disposed between said carrier node and a corresponding remote terminal.
32. The system of claim 25, further including two straight-through repeaters, each of said repeaters operatively disposed between said carrier node and a corresponding remote terminal.